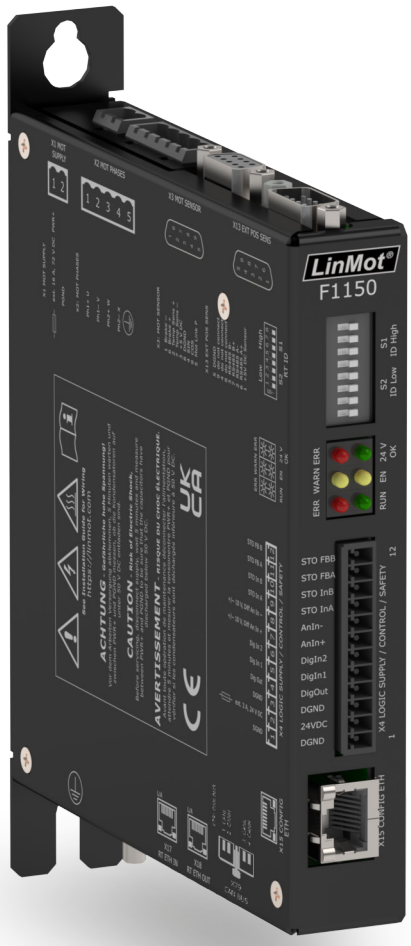
SERVO DRIVE F1150-DS-UC-3S



- Compact drive with EtherCAT and CANopen interface
- Optimized for LinMot motors and third-party actuators
- Configuration via Ethernet (X15) or EtherCAT (EoE)
- 32 A power stage with STO safety
- Sensor interface for incremental and absolute encoders
- Plug and Play (PnP) motor configuration

Servo Drive F1150-DS-UC-3S

F1150 series drives are axis controllers with 32-bit position resolution and an integrated power stage for linear motors and rotary drives. They are suited for standard and high-end positioning tasks with NC synchronization.

This flexible hardware in a compact housing can control any 2- or 3-phase motor, so that low-power rotary servo motors such as brushless DC motors can be integrated into the same control concept. In single- and multi-axis applications with linear motors and other actuators, the LinMot F1150 series servo drives provide a consistent solution for a flexible drive concept.

The servo drives have separate supplies for the logic and the power section. The advantage: when the machine power is restarted, the drive and the linear motor do not have to be reinitialized, because all process data, including the actual position of the linear motor, are still up to date.

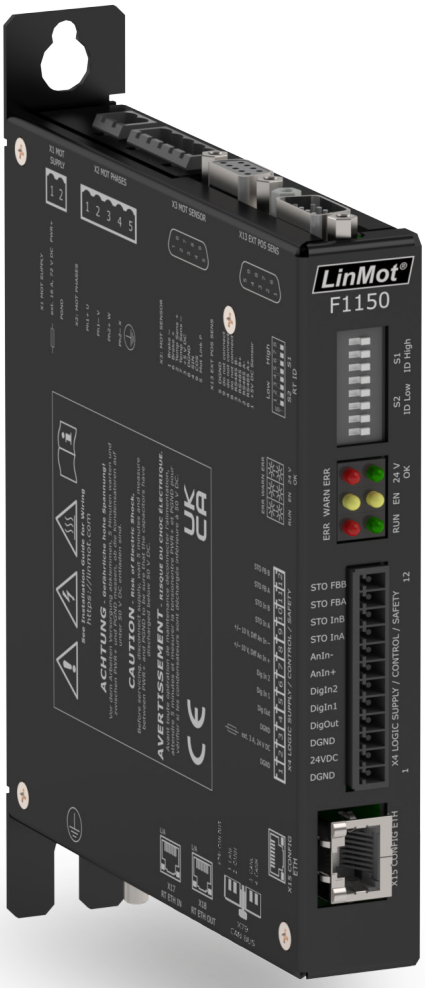
The ultra-fast control cycle together with the high resolution of the A/D converter ensures perfect motor control in demanding positioning tasks, including interpolated moves, curve tracking, positioning with motion profiles and position streaming. The drives can be configured directly by the higher-level controller; the Ethernet interface ensures fast parameter transfer.

The F1150 servo drive with 3S safety allows the drives to be safely stopped via control signals (STO) without interrupting the motor supply.

Freely programmable analog and digital inputs and fast trigger inputs are available as fast process interfaces or for direct evaluation of sensor signals.

The intuitive PC software LinMot-Talk makes configuration easy. In addition to the online documentation, extensive debugging tools such as an oscilloscope and the error log ensure fast commissioning of the axes. Motors with Plug and Play function are detected and configured automatically.

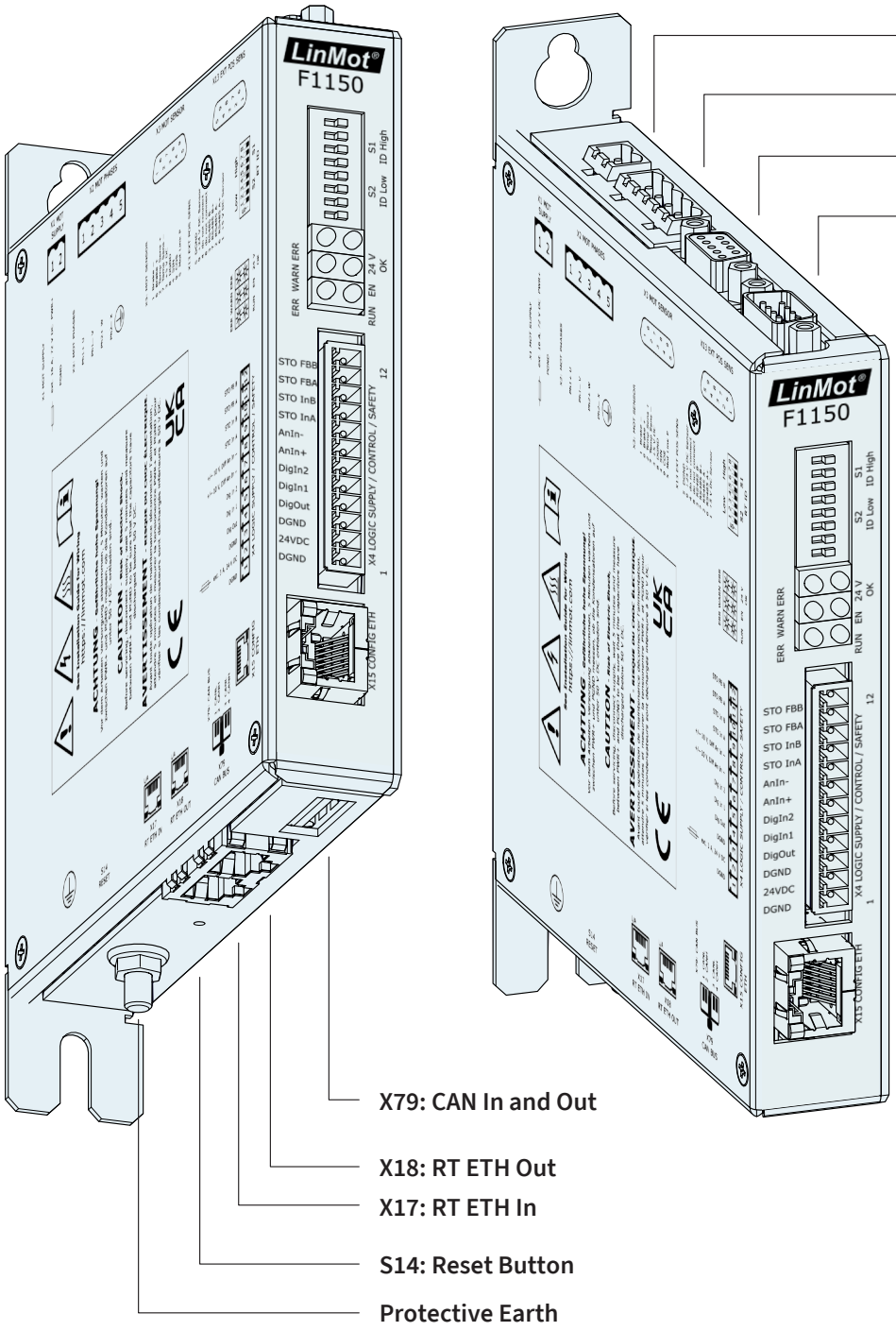
The F1150 servo drives provide all interfaces needed to equip linear motors or rotary drives with optional peripherals such as home and limit switches or high-precision external position sensors.



Motor Supply	
	72 VDC (24 to 85 VDC)
	Ext. circuit breaker: 20 A / min. 100 VDC / C-trip / 5 kA SCCR
Max. Supported Motor Current	
	32 A_{pk} (0 to 599 Hz) / 6 A_{rms}
Logic Supply	
	24 VDC (22 to 26 VDC), ext. fuse 3 A slow blow
Motor Control	
LinMot motors P0x-... / PR0x-...	•
Selected third-party motors (contact support)	•
Plug and Play (PnP) Auto Configuration	•
Phase short-circuit on STO, disable and error states*	•
Technology Functions	
	Point-to-point motion commands (VAI)
	Jerk-limited motion commands (VAIJ)
	Process monitoring
	Command Table with 255 individual motion commands
	Plug and Play (PnP) Auto Configuration
	Curves with up to 50 motion profiles / up to 8110 curve points
	Real-time streaming
	Drive profiles
Fieldbuses (Protocols)	
EtherCAT CiA402 (preinstalled)	•
CANopen up to 1MBaud (CANopen FW must be installed)	**(•)**
Interfaces	
Analog inputs +-10V	1
Digital inputs / outputs 24 V	2 / 1
Brake output 24 V / 0.5 A (peak 1.4 A)	1
Incremental (RS422 up to 20 Mcounts/s, A-B only, Z not supported)	•
Absolute (BiSS-C (preferred), SSI, BiSS-B, EnDat 2.1, EnDat 2.2)	•
Configuration Interfaces	
Ethernet (X15), 100BASE-TX, IPV4 and IPV6	•
Ethernet (EoE) (only if EtherCAT is used)	•
Timings	
Min. bus cycle time	250 µs
PWM frequency	16 kHz
Trigger commands	≥ 250 µs
Current controller	125 µs
Position controller	250 µs
Integrated Safety Functions	
STO Safe Torque Off (3S-Safety) with phase short-circuit	•
Safety integrity (from hardware V1RC2)	SIL 2 / PL d / Category 3
Safety function details	Safety Manual 0185-1183
Certification	
cULus	Listed according to UL 61800-5-1 and CSA C22.2, File E316095 (from hardware V1RC2)
TÜV Nord	1435.IM.155828/24: STO up to SIL 2 (IEC 61508, IEC 62061) / PL d (ISO 13849-1)
CE / UKCA	EN 61800-3:2022, EN 61800-5-2:2017 (SIL 2)
IECEE CB Scheme	Certificate CH1-00087

* This feature greatly improves the system behavior on the STO and error states, because the motor will be braked by the eddy current.

EtherCAT® CANopen



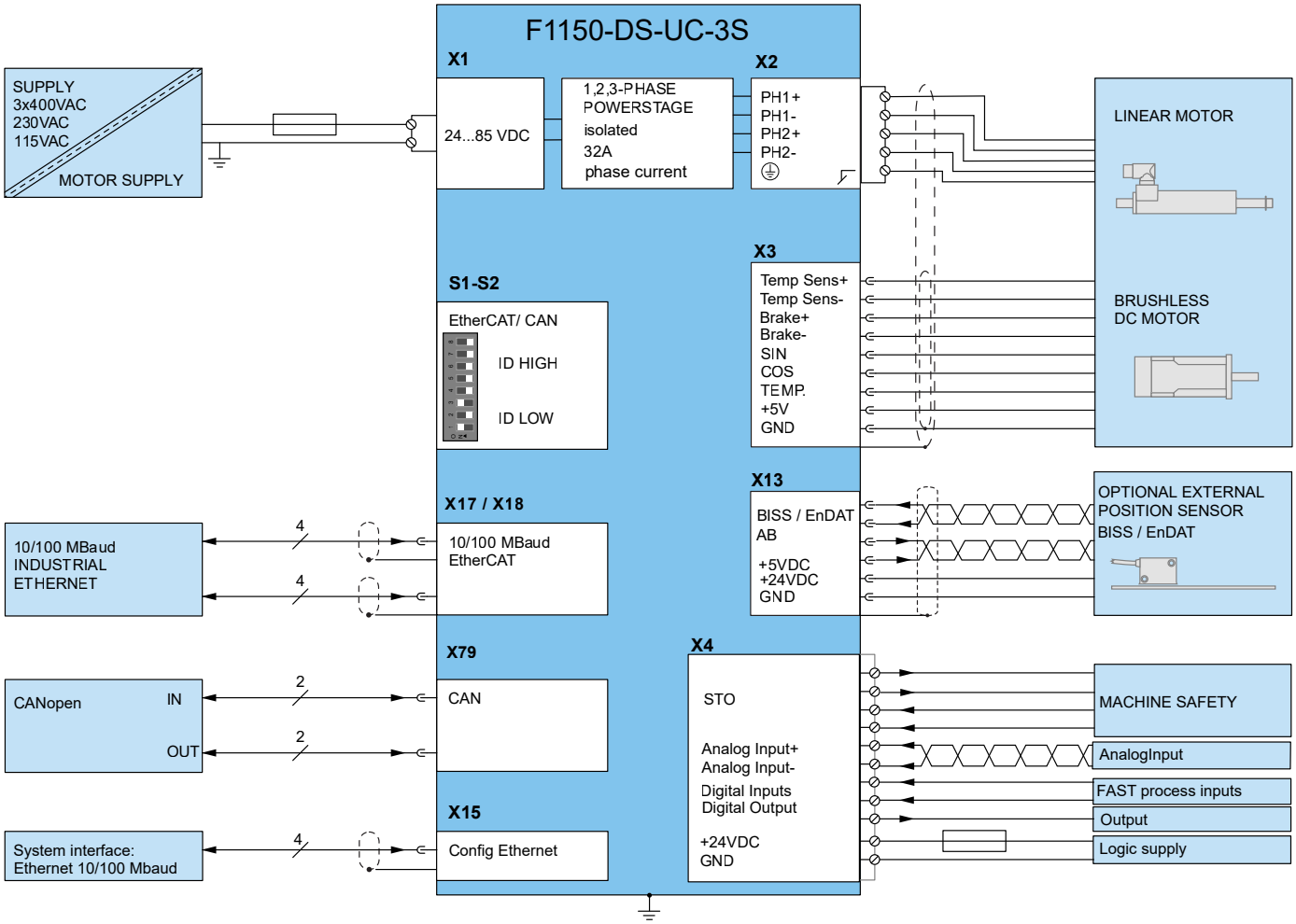
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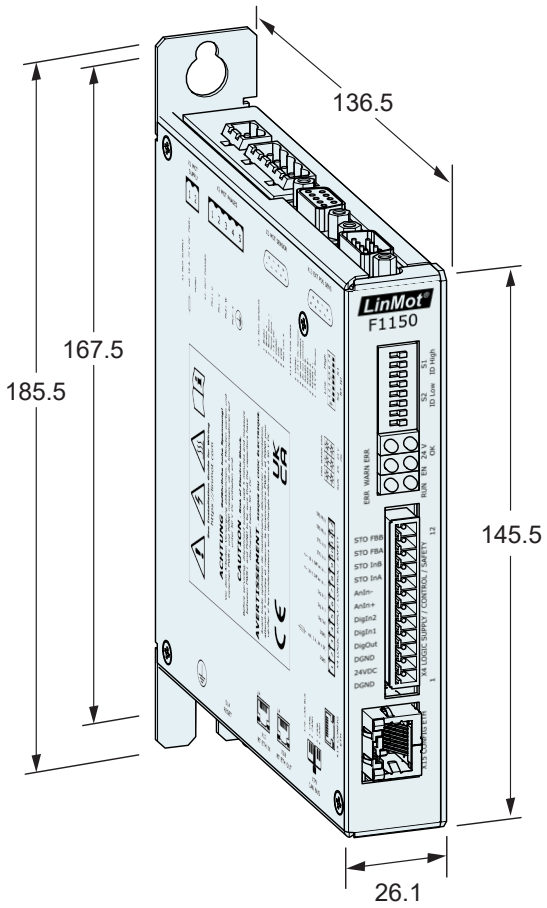
CE UK CA UL CERTIFIED E316095 UL 61800-5-1 IND. CONT. EQ.

TÜVNORD TÜV NORD Systems GmbH & Co. KG Safety Approved 1435.IM.155828/24 tuev-nord.de

cULus Listed
According to UL 61800-5-1 and CSA C22.2, File E316095 (from hardware V1RC2).
STO up to SIL 2 / PL d,
TÜV Nord 1435.IM.155828/24

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SUBJECT TO CHANGE


F1150-DS-UC-3S
X1
X2
SUPPLY
3x400VAC
230VAC
115VAC
MOTOR SUPPLY
24...85 VDC
1,2,3-PHASE
POWERSTAGE
isolated
32A
phase current
PH1+
PH1-
PH2+
PH2-
LINEAR MOTOR
X3
S1-S2
Temp Sens+
Temp Sens-
Brake+
Brake-
SIN
COS
TEMP.
+5V
GND
EtherCAT/ CAN
ID HIGH
ID LOW
BRUSHLESS
DC MOTOR
X13
X17 / X18
BISS / EnDAT
AB
+5VDC
+24VDC
GND
OPTIONAL EXTERNAL
POSITION SENSOR
BISS / EnDAT
10/100 MBaud
INDUSTRIAL
ETHERNET
4
4
10/100 MBaud
EtherCAT
X79
X4
CANopen
IN
OUT
2
2
CAN
STO
Analog Input+
Analog Input-
Digital Inputs
Digital Output
+24VDC
GND
MACHINE SAFETY
AnalogInput
FAST process inputs
Output
Logic supply
X15
System interface:
Ethernet 10/100 Mbaud
4
Config Ethernet



Dimensions in mm
Mounting points for M5 screws

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Servo Drive		F1150-DS-UC-3S
Width	mm (in)	26.1 (1.03)
Height	mm (in)	145.5 (5.73)
Height with fixings	mm (in)	185.5 (7.30)
Depth	mm (in)	136.5 (5.37)
Weight	g (lb)	765 (1.69)
Mounting screws		2 x M5
Mounting distance	mm (in)	167.5 (6.59)
Case, degree of protection	IP	20
Storage temperature	°C	-25...40, maximum change 20 K/hour
Transport temperature	°C	-20...70
Operating temperature	°C	5...40 at rated data
Relative humidity		< 85 % (non-condensing)
Air pressure	hPa	700...1060
Exposure to ionizing radiation		Not acceptable
Exposure to corrosive environment		Not acceptable
EMC		IEC 61800-3:2022 / EN 61800-5-2:2017 (SIL 2) / EN/IEC 61000-6-7 (Functional Safety) EN 55011:2016+A1:2017+A11:2020+A2:2021 class A / EN IEC 55011:2025 class A EN 55032:2015+A1:2020+A11:2020 class A
Pollution	IEC/EN 60664-1	Pollution degree 2
Shock resistance (30 ms)	m/s^2	50
Vibration resistance (10-150 Hz)	m/s^2	10
Max. case temperature	°C	70
Max. power dissipation	W	30
Mounting place		In the control cabinet (at least IP54)
Mounting position		Vertical
Distance between drives	mm (in)	Without power derating*: 20 (0.8) horizontal / 50 (2) vertical With power derating*: 5 (0.2) horizontal / 20 (0.8) vertical

* The derating depends on the situation in the cabinet. The temperature of the drive should be checked under full load (the temperature should be stable, which may take an hour or more). This allows you to verify that there is enough margin when the cabinet reaches the maximum allowable temperature of 40 °C. For example, if the drive temperature reaches 45 °C at a cabinet temperature of 30 °C, this results in a drive temperature of about 55 °C at a cabinet temperature of 40 °C. By default, the warning level of the drive is set to 75 °C and the error level to 80 °C. If the drive temperature stays above the warning level for a long time, this may reduce the lifetime of the drive.

Servo Drive		
Item	**Description**	**Art. No.**
F1150-DS-UC-3S-000	EtherCAT DS402 Drive (72V/32A), STO	0150-6489

Accessories		
Item	**Description**	**Art. No.**
Terminal Kits		
DC01-F1150/F1250/X1/X4	Terminal Kit X1/X4, for F1150/F1250	0150-7428
DC01-F1050/F1150/F1250/X1	Terminal Kit X1, Motor PWR 72 VDC Input	0150-7426
DC01-F1X50/C1X50/X2	Terminal Kit X2, Motor Phases	0150-3526
DC01-F1X50-3S/X4	Terminal Kit X4, 24 VDC & Logic for F1X50-3S	0150-7276
Recommended Power Supplies		
S02-72/1000	Power Supply 72 V/1000 W (3000 W Peak), 3x400-480 VAC	0150-4535
S02-72/600	Power Supply 72 V/600 W (1500 W Peak), 120-230 VAC	0150-5700
Compatible Power Supplies		
S01-72/500	Power Supply 72 V/500 W, 1x120/230 VAC	0150-1874
S01-72/1000	Power Supply 72 V/1000 W, 3x340-550 VAC	0150-1872
T01-72/420-Multi	T-Supply 72 V/420 VA, 3x230/400/480 VAC	0150-1869
T01-72/900-Multi	T-Supply 72 V/900 VA, 3x230/400/480 VAC	0150-1870
T01-72/1500-Multi	T-Supply 72 V/1500 VA, 3x230/400/480 VAC	0150-1871

Connectors X1 and X4 are NOT delivered with the drive! A Terminal Kit must be ordered together with the drive.
The X2 plug is included on the motor cable. For UL applications, the Terminal Kits listed above must be used.

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